534,744
Rec'd PCT/PTO 12 MAY 2005
10/534744

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
27 May 2004 (27.05.2004)

PCT

(10) International Publication Number
WO 2004/044207 A1

(51) International Patent Classification[7]: C12N 15/82, 15/11, C07K 14/415

(21) International Application Number: PCT/CA2003/001754

(22) International Filing Date: 14 November 2003 (14.11.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/426,012 14 November 2002 (14.11.2002) US

(71) Applicant *(for all designated States except US)*: UNIVERSITY OF SASKATCHEWAN TECHNOLOGIES INC. [CA/CA]; University of Saskatchewan, Room 304, Kirk Hall, Saskatoon, Saskatchewan S7N 5C8 (CA).

(72) Inventors; and

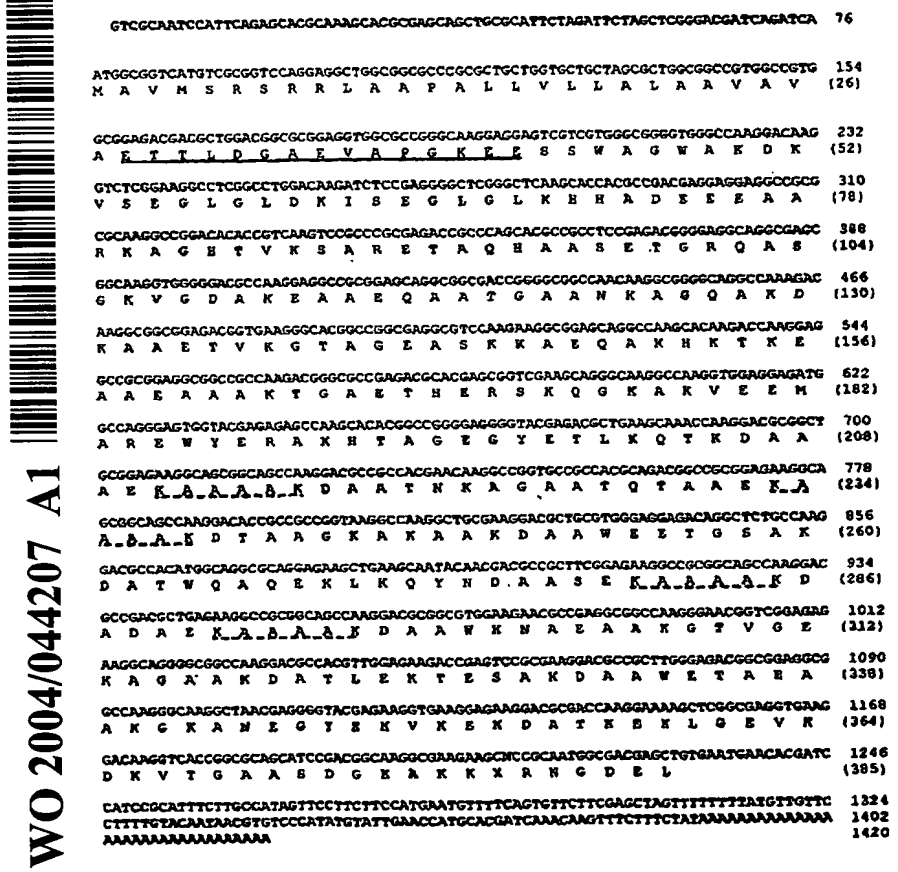
(75) Inventors/Applicants *(for US only)*: **ROBERTSON, Albert, James** [CA/CA]; Box 1, Groupsite 602, R.R.6, Saskatoon, Saskatchewan S7K 3J9 (CA). **GUSTA, Lawrence, Victor** [CA/CA]; 515 Copland Crescent, Saskatoon, Saskatchewan S7H 2Z4 (CA). **WU, Guohai** [CA/CA]; 2103 Kenderdine Road, Saskatoon, Saskatchewan S7N 4A9 (CA).

(74) Agents: **GALE, Edwin, J.** et al.; Kirby Eades Gale Baker, Box 3432, Station D., Ottawa, Ontario K1P 6N9 (CA).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

[Continued on next page]

(54) Title: PLANT STRESS TOLERANCE GENES, AND USES THEREFOR



(57) Abstract: Plant stresses such as pest infestations, disease, drought, flood, and excessive temperatures can lead to significant losses of crops each year. There is a continuing need to develop novel plant varieties that are less susceptible to damage or loss by such stresses. The present invention provides for the isolation, characterization and use of an entirely novel class of plant genes, generally designated *ROB5*. Transgenic plants expressing *ROB5* can show a dramatic improvement in their capacity to tolerate a variety of stress conditions. Moreover, *ROB5* expression can further lead to marked increases in plant growth rates and plant vigor. The present invention encompasses all such *ROB5* genes and peptides encoded thereby, plants expressing corresponding *ROB5* constructs, and plant products thereof.

WO 2004/044207 A1